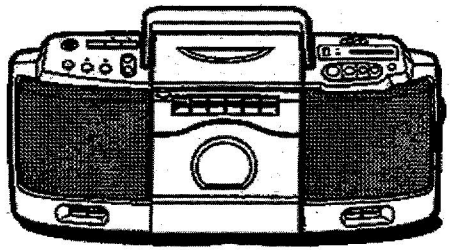
aiwa

aiwa SERVICE

CSD-SL20

SERVICE MANUAL



COMPACT DISC STEREO
CASSETTE RECORDER

- BASIC TAPE MECHANISM : TN-21ZSC-1745
- BASIC CD MECHANISM : KSM-213 CDM

•TYPE: U,EZ

S/M Code No. 09-998-410-5R1

SPECIFICATIONS

<Tuner section>

Frequency range
FM: 87.5 MHz to 108.0 MHz
Rod antenna
AM:
EZ: 530 kHz to 1,605 kHz
U: 530 kHz to 1,710 kHz
Ferrite bar antenna

<Deck section>

Track format 4 tracks, 2 channels
Frequency range Normal tape: 50 - 12,500 Hz (EIAJ)
Recording system AC bias
Erasing system Magnet erase
Heads Recording/playback head (1)
Erasure head (1)

<CD player section>

Disc Compact disc
Scanning method Non-contact optical scanner (semiconductor laser)

<General>

Speaker Front: 80 mm cone type (2)
Rear: 60 mm cone type (2)
Outputs Headphones jack: stereo mini-jack
Power output U: 2.5 W + 2.5 W
(EIAJ 7 ohms, T.H.D. 10 %)
EZ: 4.0 W + 4.0 W
(DIN MUSIC POWER),
2.5 W + 2.5 W
(EIAJ 7 ohms, T.H.D. 10 %),
1.9 W + 1.9 W
(DIN 1 % Rated Power)
Power requirements U: DC 12 V using eight size C (R14) batteries, AC 120 V, 60 Hz
EZ: DC 12 V using eight size C (R14) batteries, AC 230 V, 50 Hz
Power consumption U: 12 W
EZ: 17 W
Dimensions (W x H x D) 410 x 186 x 114 mm
(16 1/4 x 7 3/8 x 4 1/2 in.)
Weight 3 kg (6 lbs. 10 oz.) excluding batteries

• Design and specifications are subject to change without notice.

ACCESSORIES / PACKAGE LIST

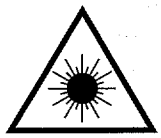
If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8Z-CD7-905-010		IB,U(ESF)B<U>
1	8Z-CD7-908-010		IB,EZ(9L)B<EZ>
⚠ 2	87-A80-109-010		AC CORD,HK7281 BLK U<U>
⚠ 2	87-A80-036-010		AC CORD SET ASSY,E W/FLTR<EZ>

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!
WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserståling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!
Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saataa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!
Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herin may result in hazardous radiation exposure.

ATTENTION
L'utillisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL
Usynlig laserståling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

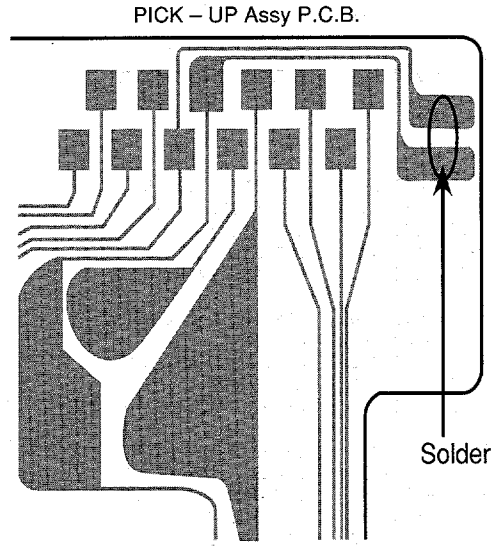
CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT

Precaution to replace Optical block

(KSS-213C)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in right figure.



ELECTRICAL MAIN PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

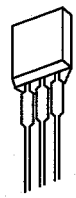
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A20-446-010		C-IC,LA9241ML
	87-A20-459-010		C-IC,LC78622ED
	87-A20-856-010		IC,BA6898S
	87-A21-145-040		C-IC,BA4560F
	87-A20-946-040		C-IC,MM1434XF
	87-A21-193-010		IC,TA8227P
	87-070-416-010		IC,NJU7201L55
	87-A21-111-040		C-IC,M62495FP
	8Z-CD5-636-010		IC,LC865516A-5K51
	87-A20-955-010		IC,LA1828
TRANSISTOR			
	87-026-464-080		TR,DTC114TS (0.3W)
	87-026-463-080		TR,2SA933S-S(0.3W)
	87-026-291-080		TR,DTC124XS
	89-112-965-080		TR,2SA1296GR(0.75W)
	87-026-496-080		FET,2SJ103GR
	89-110-155-080		TR,2SA1015GR(0.4W)
	87-026-462-080		TR,2SC1740
	89-318-154-080		TR,2SC1815GR(0.4W)
	89-320-011-080		TR,2SC2001K(15W)
	89-213-702-010		TR,2SB1370E
	87-026-462-080		TR,2SC1740SS(RS 0.3W)
	89-113-184-080		TR,2SA1318TUS
	87-026-572-080		TR,DTA114TS
	87-026-215-080		TR,DTC114YS
	89-319-233-080		TR,2SC19230(0.1W)
DIODE			
	87-020-465-080		DIODE,1SS133 (110MA)
	87-A40-466-080		ZENER,MTZJ2.7A
	87-017-139-010		ZENER,HZS15-2
	87-A40-465-010		DIODE,FR202
	87-017-161-080		ZENER,HZS7C2L
	87-017-148-080		ZENER,HZS6A1L
	87-027-607-080		ZENER,HZ7B3L
	87-A40-623-010		LED,L-34GDSL GRN
	87-A40-622-010		LED,L-34HDSL RED
	87-070-345-080		DIODE,IN4148
	87-017-931-080		ZENER,MTZJ5.6B
	87-A40-226-080		VARI-CAP,SVC251SPA
MAIN C.B			
C101	87-010-403-080		CAP,ELECT 3.3-50V
C102	87-010-545-080		CAP,ELECT 0.22-50V
C111	87-010-176-080		C-CAP,S 680P-50 SL
C113	87-010-186-080		CAP,MYLAR 4700P
C114	87-012-156-080		C-CAP,S 220P-50 CH
C115	87-010-545-080		CAP,ELECT 0.22-50V
C116	87-012-140-080		CAP 470P
C117	87-010-374-080		CAP,ELECT 47-10V
C118	87-010-401-080		CAP,ELECT 1-50V
C119	87-010-184-080		CHIP CAPACITOR 3300P(K)
C121	87-010-145-080		C-CAP,S 1P-50 CH
C122	87-010-312-080		C-CAP,S 15P-50 CH
C125	87-010-404-080		CAP,ELECT 4.7-50V
C126	87-010-380-080		CAP,ELECT 47-16V
C127	87-010-405-080		CAP,ELECT 10-50V
C128	87-010-263-080		CAP,ELECT 100-10V
C130	87-010-544-080		CAP,ELECT 0.1-50V<U>
C130	87-010-403-080		CAP,ELECT 3.3-50V<EZ>
C132	87-010-263-080		CAP,ELECT 100-10V
C133	87-010-198-080		CAP,CHIP 0.022
C134	87-010-248-080		CAP,ELECT 220-10V
C135	87-010-374-080		CAP,ELECT 47-10V
C136	87-010-197-080		CAP,CHIP 0.01 DM
C137	87-010-401-080		CAP,ELECT 1-50V
C141	87-012-154-080		C-CAP,S 150P-50 CH
C142	87-010-196-080		C-CAP,S 0.1-50 ZF
C145	87-010-405-080		CAP,ELECT 10-50V
C146	87-010-405-080		CAP,ELECT 10-50V
C147	87-010-248-080		CAP,ELECT 220-10V
C148	87-010-196-080		C-CAP,S 0.1-50 ZF
C149	87-010-312-080		C-CAP,S 15P-50 CH<EZ>
C149	87-010-316-080		C-CAP,S 33P-50 CH<U>
C150	87-010-312-080		C-CAP,S 15P-50 CH<EZ>
C150	87-010-316-080		C-CAP,S 33P-50 CH<U>
C151	87-010-196-080		C-CAP,S 0.1-50 ZF
C152	87-010-263-080		CAP,ELECT 100-10V<U>
C153	87-010-197-080		C-CAP,S 0.01-25 KB
C154	87-010-196-080		C-CAP,S 0.1-50 ZF
C158	87-010-404-080		CAP,ELECT 4.7-50V
C173	87-010-248-080		CAP,ELECT 220-10V
C174	87-010-197-080		CAP,CHIP 0.01 DM
C176	87-010-221-080		CAP,ELECT 470-10V
C177	87-010-221-080		CAP,ELECT 470-10V
C178	87-010-197-080		CAP,CHIP 0.01 DM
C179	87-010-197-080		CAP,CHIP 0.01 DM
C180	87-010-197-080		CAP,CHIP 0.01 DM
C190	87-012-156-080		C-CAP,S 220P-50 CH
C191	87-010-196-080		C-CAP,S 0.1-50 ZF
C196	87-010-178-080		CHIP CAP 1000P
C202	87-010-196-080		CHIP CAPACITOR,0.1-25
C203	87-010-374-080		CAP,ELECT 47-10V
C204	87-010-402-080		CAP,ELECT 2.2-50V
C205	87-010-379-080		CAP,ELECT 22-10V
C206	87-010-181-080		C-CAP,S 1800P-50 KB
C207	87-010-379-080		CAP,ELECT 22-10V
C208	87-010-404-080		CAP,ELECT 4.7-50V
C209	87-012-158-080		C-CAP,S 390P-50 CH
C211	87-010-402-080		CAP,ELECT 2.2-50V<U>
C212	87-010-402-080		CAP,ELECT 2.2-50V<U>
C213	87-010-404-080		CAP,ELECT 4.7-50V
C215	87-012-158-080		C-CAP,S 390P-50 CH
C216	87-010-402-080		CAP,ELECT 2.2-50V
C217	87-010-181-080		C-CAP,S 1800P-50 KB
C218	87-010-263-080		CAP,ELECT 100-10V
C219	87-010-198-080		CAP,CHIP 0.022
C222	87-010-183-080		C-CAP,S 2700P-50 KB
C225	87-010-405-080		CAP,ELECT 10-50V
C226	87-010-401-080		CAP,ELECT 1-50V
C227	87-010-182-080		CAP,CHIP,S 2200P-50 KB
C228	87-010-182-080		CAP,CHIP,S 2200P-50 KB
C229	87-010-401-080		CAP,ELECT 1-50V
C230	87-010-405-080		CAP,ELECT 10-50V
C232	87-010-183-080		C-CAP,S 2700P-50 KB
C234	87-010-374-080		CAP,ELECT 47-10V
C235	87-010-400-080		CAP,ELECT 0.47-50V
C237	87-010-404-080		CAP,ELECT 4.7-50V
C243	87-010-196-080		CHIP CAPACITOR,0.1-25
C244	87-010-248-080		CAP,ELECT 220-10V
C245	87-010-405-080		CAP,ELECT 10-50V
C246	87-010-374-080		CAP,ELECT 47-10V
C249	87-010-197-080		C-CAP,S 0.01-25
C250	87-010-197-080		C-CAP,S 0.01-25
C401	87-010-401-080		CAP,ELECT 1-50V
C402	87-010-401-080		CAP,ELECT 1-50V
C403	87-010-197-810		C-CAP,S 0.01-25KB
C404	87-010-197-810		C-CAP,S 0.01-25KB
C405	87-010-197-810		C-CAP,S 0.01-25KB
C406	87-010-197-810		C-CAP,S 0.01-25KB
C407	87-010-401-080		CAP,ELECT 1-50V
C408	87-012-141-080		C-CAP,S 0.22-16ZF
C410	87-010-400-080		CAP,ELECT 0.47-50V
C411	87-010-400-080		CAP,ELECT 0.47-50V
C413	87-012-141-080		C-CAP,S 0.22-16ZF

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C401	87-010-401-080		CAP,ELECT 1-50V
C402	87-010-401-080		CAP,ELECT 1-50V
C403	87-010-197-810		C-CAP,S 0.01-25KB
C404	87-010-197-810		C-CAP,S 0.01-25KB
C405	87-010-197-810		C-CAP,S 0.01-25KB
C406	87-010-197-810		C-CAP,S 0.01-25KB
C407	87-010-401-080		CAP,ELECT 1-50V
C408	87-012-141-080		C-CAP,S 0.22-16ZF
C410	87-010-400-080		CAP,ELECT 0.47-50V
C411	87-010-400-080		CAP,ELECT 0.47-50V
C413	87-012-141-080		C-CAP,S 0.22-16ZF
C414	87-010-401-080		CAP,ELECT 1-50V
C415	87-010-402-080		CAP,ELECT 2.2-50V
C416	87-010-380-080		CAP,ELECT 47-16V
C417	87-010-405-080		CAP,ELECT 10-50V
C418	87-010-197-810		C-CAP,S 0.01-25KB
C423	87-010-235-080		CAP,ELECT 470-16
C424	87-010-235-080		CAP,ELECT 470-16
C425	87-010-112-080		CAP,ELECT 100-16V
C426	87-010-112-080		CAP,ELECT 100-16V
C427	87-010-112-080		CAP,ELECT 100-16V
C428	87-010-112-080		CAP,ELECT 100-16V
C429	87-010-235-080		CAP,E 470-16 SME
C430	87-010-112-080		CAP,ELECT 100-16V
C434	87-010-402-080		CAP,ELECT 2.2-50V
C435	87-010-402-080		CAP,ELECT 2.2-50V
C436	87-010-544-080		CAP,ELECT 0.1-50V
C437	87-010-546-080		CAP,ELECT 0.33-50V
C439	87-010-404-080		CAP,ELECT 4.7-50V
C440	87-010-405-080		CAP,ELECT 10-50V
C441	87-010-405-080		CAP,ELECT 10-50V
C442	87-010-405-080		CAP,ELECT 10-50V
C443	87-010-263-080		CAP,ELECT 100-10V
C444	87-010-380-080		CAP,ELECT 47-16V
C445	87-010-546-080		CAP,ELECT 0.33-50V
C446	87-010-544-080		CAP,ELECT 0.1-50V
C448	87-010-404-080		CAP,ELECT 4.7-50V
C449	87-010-405-080		CAP,ELECT 10-50V
C450	87-010-405-080		CAP,ELECT 10-50V
C451	87-010-405-080		CAP,ELECT 10-50V
C453	87-010-112-080		CAP,ELECT 100-16V
C454	87-010-385-080		CAP,ELECT 220-25V
C455	87-010-248-080		CAP,ELECT 220-10V
C456	87-010-197-080		CAP,CHIP 0.01 DM
C457	87-010-198-080		CAP,CHIP 0.022
C458	87-010-198-080		CAP,CHIP 0.022
C459	87-010-198-080		CAP,CHIP 0.022
C460	87-010-198-080		CAP,CHIP 0.022
C461	87-010-453-090		CAP,ELECT 4700-25V
C463	87-010-198-080		CAP,CHIP 0.022
C464	87-010-198-080		CAP,CHIP 0.022
C465	87-010-260-080		CAP,ELECT 47-25V
C466	87-010-404-080		CAP,ELECT 4.7-50V
C467	87-010-401-080		CAP,ELECT 1-50V
C468	87-010-235-080		CAP,ELECT 470-16V
C471	87-010-263-080		CAP,ELECT 100-10V
C472	87-010-248-080		CAP,ELECT 220-10V
C473	87-010-197-080		CAP,CHIP 0.01 DM
C474	87-010-263-080		CAP,ELECT 100-10V
C601	87-010-197-080		CAP, CHIP 0.01 DM
C602	87-010-317-080		C-CAP,S 39P-50 CH
C603	87-010-319-080		C-CAP,S 59P-50 CH
C604	87-010-315-080		C-CAP,S 27P-50 CH
C605	87-010-313-080		CAP,CHIP 18P
C606	87-010-400-080		CAP,ELECT 0.47-50V
C607	87-010-401-080		CAP,ELECT 1-50V
C608	87-010-196-080		CHIP CAPACITOR,0.1-25
C609	87-010-248-080		CAP,ELECT 220-10V SME
C610	87-010-312-080		C-CAP,S 15P-50 CH
C701	87-010-405-080		CAP,ELECT 10-16V
C702	87-010-194-080		CAP,CHIP 0.047<EZ>
C705	87-010-379-080		CAP,ELECT 22-16V
C706	87-010-197-080		CAP,CHIP 0.01 DM
C707	87-010-197-080		CAP,CHIP 0.01 DM
C708	87-010-197-080		CAP,CHIP 0.01 DM
C709	87-010-188-080		CAP,CHIP 6800P
C710	87-010-188-080		CAP,CHIP 6800P
C712	87-010-196-080		C-CAP,S 0.1-25 ZF<EZ>
C715	87-010-196-080		C-CAP,S 0.1-25 ZF<EZ>
C716	87-010-196-080		C-CAP,S 0.1-25 ZF
C717	87-010-314-080		C-CAP,S 22P-50V
C718	87-010-198-080		CAP,CHIP 0.022
C719	87-010-197-080		CAP,CHIP 0.01 DM
C723	87-010-316-080		C-CAP,S 33P-50 CH
C724	87-010-314-080		C-CAP,S 22P-50V
C725	87-010-314-080		C-CAP,S 22P-50V
C725	87-010-314-080		C-CAP,S 22P-50V
C726	87-010-544-080		CAP,ELECT 0.1-50V
C727	87-010-400-080		CAP,ELECT 0.47-50V
C728	87-010-403-080		CAP,ELECT 3.3-50V
C729	87-010-197-080		CAP,CHIP 0.01 DM
C730	87-010-178-080		C-CAP,S 1000P-50<EZ>
C731	87-010-182-080		C-CAP,S 2200P-50 KB
C733	87-010-148-080		C-CAP,S 4P-50CH
C734	87-010-400-080		CAP,ELECT 0.47-50V
C737	87-010-312-080		C-CAP,S 15P-50 J CH
C738	87-010-182-080		C-CAP,S 2200P-50 B<U>
C739	87-010-263-080		CAP,ELECT 100-10V
C799	87-010-197-080		CAP,CHIP 0.01 DM
CF701	87-008-261-010		FILTER, SFE10.7MA5-A
CF702	87-008-261-010		FILTER, SFE10.7MA5-A
CF703	87-A91-150-010		FLTR, CFAL-455(TOKO)
CN102	87-A60-248-010		CONN,16P H CFF1416
CN103	88-CD7-613-010		CONN ASSY,6P CD MOTOR
CN104	87-009-030-010		CONNECTOR 2P PH M
CN201	88-CD7-609-010		CONN,4P V
CN202	8Z-CD7-615-010		CONN,ASSY,3P REC-SW
CN406	8Z-CS3-607-010		CONN,2P V POWER
L101	87-005-849-080		COIL,10UH J SP02<U>
L103	87-005-849-080		COIL,10UH J SP02<EZ>
L201	87-007-342-010		COIL,OSC 85K BIAS
L601	87-005-849-080		COIL,10UH J SP02
L701	87-005-849-080		COIL,10UH<EZ>
L703	87-A50-335-010		COIL,FM IFT (TOKO)
L704	87-A50-336-010		COIL,AM IFT (TOKO)
L705	87-A50-337-010		COIL,AM OSC (TOKO)
L706	87-A50-349-010		COIL,BAR ANT AMW (COI)
L707	87-A50-347-010		COIL,FM BPF EX
L709	87-A50-334-010		COIL,FM DET (TOKO)
L710	87-A50-343-010		COIL,FM OSC EX
L711	87-A50-345-010		COIL,FM RF EX
PVC701	87-A90-984-010		TUN-CAP,20P-160P AL-U(TOKO)<U>
PVC701	87-A90-983-010		TUN-CAP,40P-140P AL-D(TOKO)<EZ>
R172	87-010-322-080		C-CAP,S 100P-50 CH<EZ>
R173	87-010-322-080		C-CAP,S 100P-50 CH<EZ>
R174	87-010-322-080		C-CAP,S 100P-50 CH<EZ>
R175	87-010-322-080		C-CAP,S 100P-50 CH<EZ>
R176	87-010-322-080		C-CAP,S 100P-50 CH<EZ>
R453	87-029-124-090		RESISTOR, FUSE 1/4W 2.2
RJ703	87-012-155-080		C-CAP,S 180P-50CH<EZ>
RJ705	87-010-322-080		C-CAP,S 100P-50 J CH<EZ>
SW101	81-590-677-010		SW,LEAF
SW201	88-CD7-629-010		SW,SL-2-3 MO/ST
SW702	88-CD7-628-010		SW,SL-2-2 BAND
X101	81-592-641-080		CERALOCK 16.93MHZ
X601	87-030-273-010		VIB,XTAL 32.768K5PPM
X602	87-030-376-080		VIB,CER CSA5.76MG200

TRANSISTOR ILLUSTRATION

E C B

2SA1296
2SC1815GR



E C B

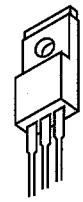
DTC114TS 2SA1318TU
DTC124XS 2SA933S-S
DTA114TS 2SC1740SS
DTC114YS

E C B

2SA1015GR
2SC1923
2SC2001

S G D

2SJ103



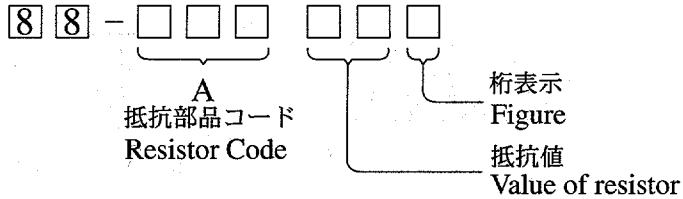
B C E

2SB1655

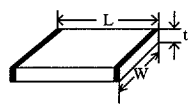
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
KEY 1/2 C.B			
LED605	87-A40-623-010		LED, L-34GDSL GRN
LED606	87-A40-622-010		LED,L-34HDSL RED
LED607	87-A91-172-010		LED, SA36-11HWA-11.0MM
SW609	87-A90-770-080		SW,TACT TRT134-L4.3
SW610	87-A90-770-080		SW,TACT TRT134-L4.3
SW611	87-A90-770-080		SW,TACT TRT134-L4.3
SW612	87-A90-770-080		SW,TACT TRT134-L4.3
SW613	87-A90-770-080		SW,TACT TRT134-L4.3
KEY 2/2 C.B			
HP601	8Z-CD7-610-010		JACK,3.5 ST W/SW
LED601	87-A40-623-010		LED, L-34GDSL GRN
LED602	87-A40-623-010		LED, L-34GDSL GRN
LED603	87-A40-623-010		LED, L-34GDSL GRN
LED604	87-A40-623-010		LED, L-34GDSL GRN
SW601	87-A90-770-080		SW,TACT TRT134-L4.3
SW602	87-A90-770-080		SW,TACT TRT134-L4.3
SW603	87-A90-770-080		SW,TACT TRT134-L4.3
SW604	87-A90-770-080		SW,TACT TRT134-L4.3
SW605	87-A90-770-080		SW,TACT TRT134-L4.3
SW606	87-A90-770-080		SW,TACT TRT134-L4.3
SW607	87-A90-770-080		SW,TACT TRT134-L4.3
SW608	87-A90-770-080		SW,TACT TRT134-L4.3
BAT1 C.B			
BAT2 C.B			
MOTOR C.B			
M002	9X-262-576-910		MOTOR GEAR ASSY
PIN003	91-564-722-110		CONNECTOR,6P
SW001	91-572-085-120		LEAF SW

Oチップ抵抗部品コード／CHIP RESISTOR PART CODE

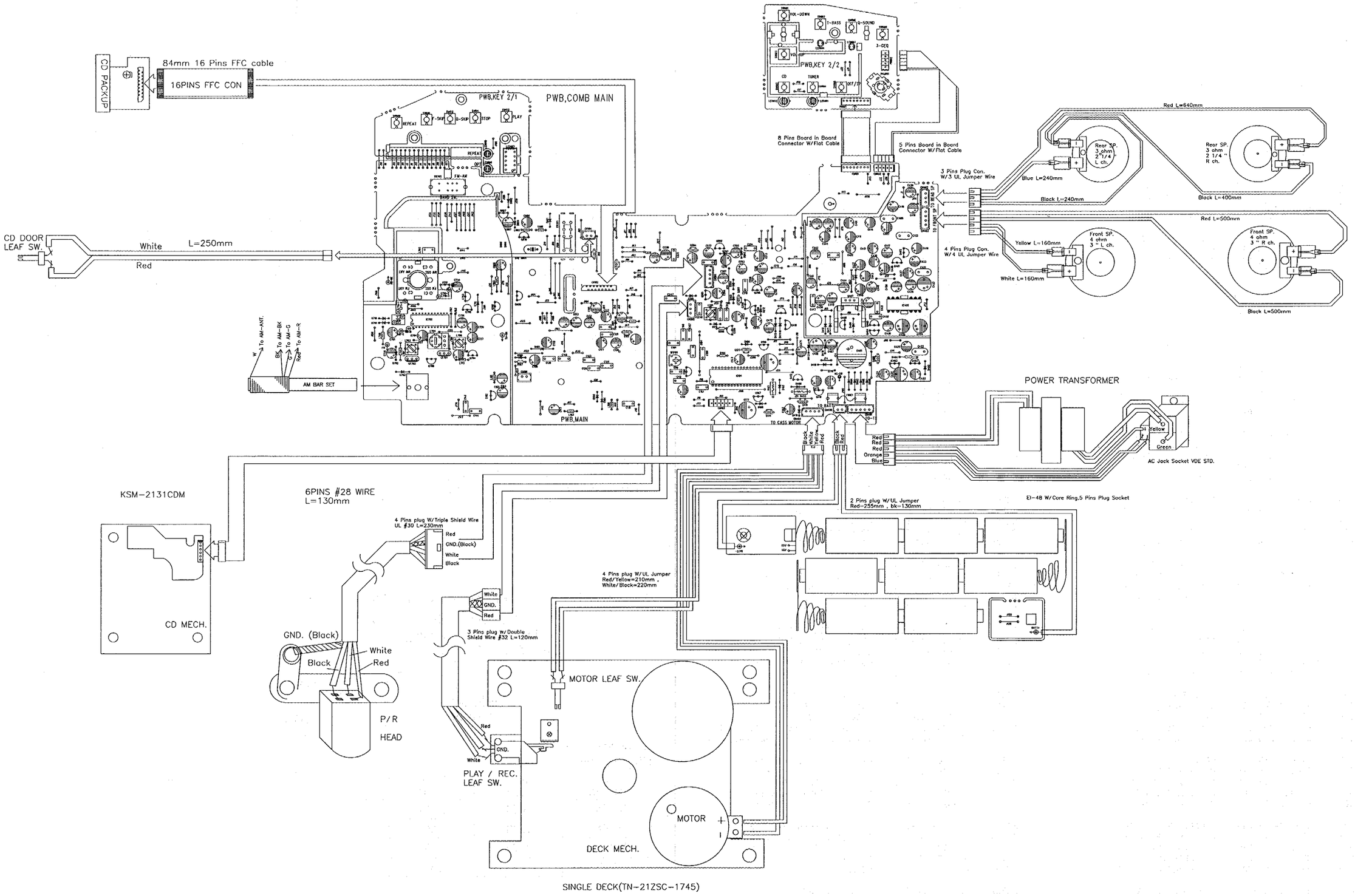
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



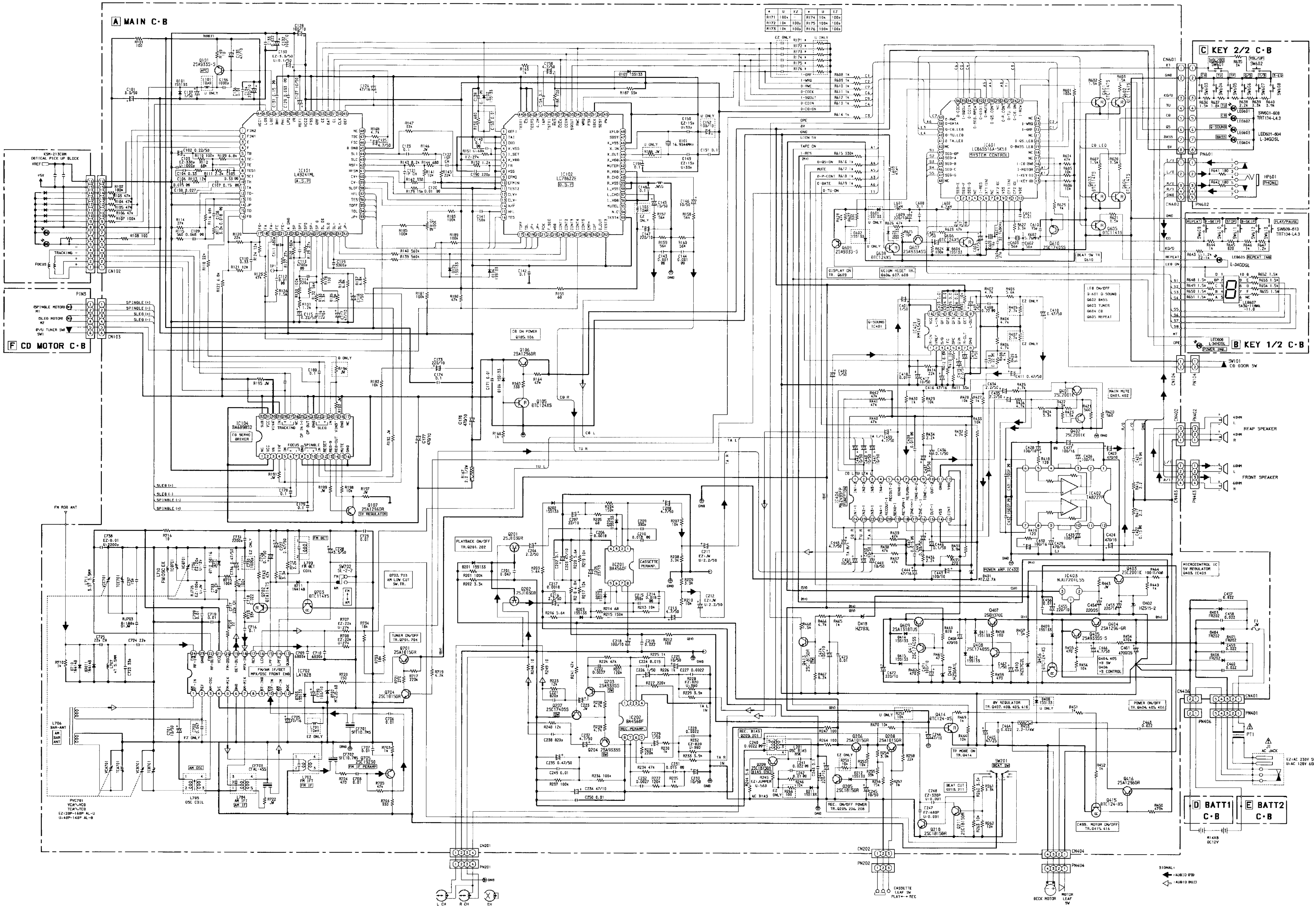
チップ抵抗
Chip resistor

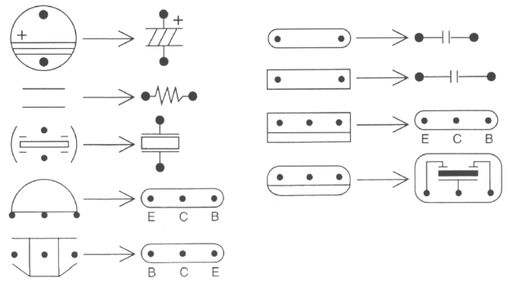
容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm) 外形／Form	L	W	t	抵抗コード : A Resistor Code : A
1/16W	1005	±5%	CJ		1.0	0.5	0.35	104
1/16W	1608	±5%	CJ		1.6	0.8	0.45	108
1/10W	2125	±5%	CJ		2	1.25	0.45	118
1/8W	3216	±5%	CJ		3.2	1.6	0.55	128

WIRE HARNESS DIAGRAM



SINGLE DECK(TN-21ZSC-1745)


A MAIN C·B
C KEY 2/2 C·B
B KEY 1/2 C·B
F CD MOTOR C·B
D BATT1 C·B
E BATT2 C·B
KSM-213CBM OPTICAL PICK UP BLOCK
IC101 LA9241ML A.S.P
IC102 LC78622E D.S.P
IC104 BA6898S2 CD SERVO DRIVER
IC601 LC865516A-5K51 SYSTEM CONTROL
IC401 MM1434XF Q-SOUND
IC402 TA8227P
IC403 NJU7201L55
IC404 M62495FP FUNCTION
IC201 BA4560F CASSETTE PERAMP.
IC202 BA4560F REC. PERAMP.
IC702 LA1828 FM/AM IF/DET MPX/OSC FRONT END
CD ON POWER Q105, 106
PLAYBACK ON/OFF TR. Q201, 202
TUNER ON/OFF TR. Q701, 704
Q702, 703 AM LOW CUT SW. TR.
MAIN MUTE Q401, 402
POWER AMP. IC402
MICROCONTROL IC 5V REGULATOR Q403, IC403
8V REGULATOR TR. Q407, 408, 405, 410
POWER ON/OFF TR. Q404, 405, 406
REC. BIAS Q209, 201
REC. ON/OFF POWER TR. Q205, 206, 208
BEAT CUT Q210, 211
TP MODE ON TR. Q414
CASS. MOTOR ON/OFF TR. Q415, 416
DISPLAY ON TR. Q609
UCON RESET TR. Q606, 607, 608
BEAT SW TR Q610
REAR SPEAKER
FRONT SPEAKER
HP601 PHONE
SW101 CD DOOR SW
J1 AC JACK
EZ: AC 230V 50HZ
U: AC 120V 60HZ
R14X8 DC12V
CASSETTE LEAF SW PLAY ←→ REC
DECK MOTOR
MOTOR LEAF SW
FM ROD ANT
L706 BAR-ANT
PVC701
SIGNAL:
: AUDIO (PB)
: AUDIO (REC)



B KEY 1/2 C.B

A MAIN C.B

▲ : EZ ONLY
■ : U ONLY

B KEY 1/2 C.B

A MAIN C.B

PN402
W TO AM-ANT
BK TO AM-BK
G TO AM-R
R TO AM-R

L706 AM BAR ANT

ANT 1
FM ANT

SW602 REPEAT
SW610 F-SKIP
SW612 B-SKIP
SW611 STOP
SW613 PLAY
LED605 REPEAT
LED606 OPT
LED607
SW702 AM FM
BAND SW

PN104 2 1
SW101 (CD DOOR SW)

LCH RCH EH
▲ : EZ ONLY
■ : U ONLY
PN201 1 4

TO KEY 2/2 C.B PN601 1 8
TO KEY 2/2 C.B PN602 1 5

PN402 TO REAR SPEAKER
PN403 TO FRONT SPEAKER
TO READ SP
TO FRONT SP

TO CASS MOTOR
TO BATT TO-TX

16 2 / 15 1 CN102
TO CD PICKUP

PN202 3 1
REC ↔PLAY CASSETTE LEAF SW

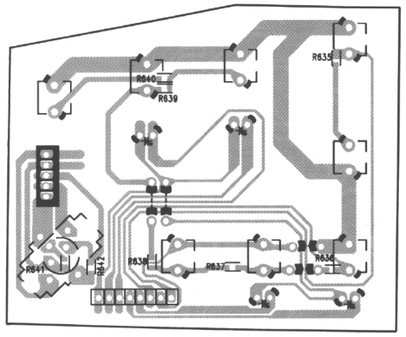
1 6
TO MOTOR C.B PIN3

DECK MOTOR
WHT
BLK
YEL
RED
MOTOR LEAF SW

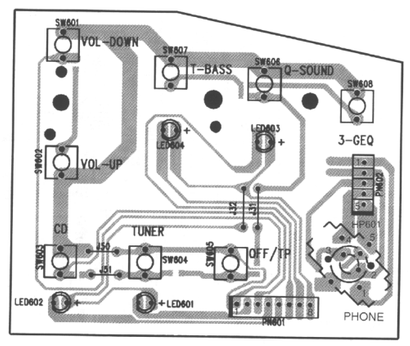
PN404 4 3 2 1
2 1 5 1
TO BATT C.B PN406
TO PT PN401

WIRING – 3

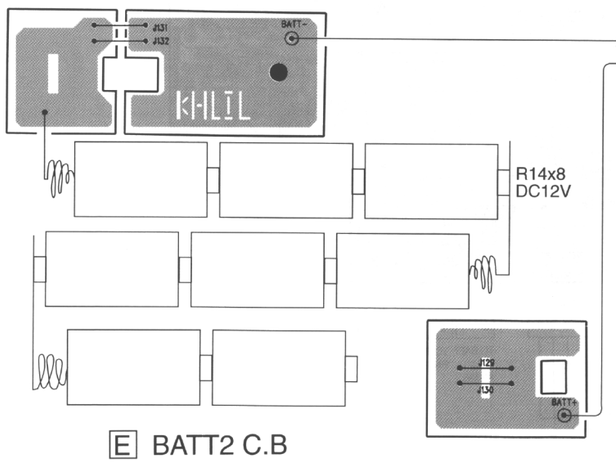
C KEY 2/2 C.B (PATTERN)



C KEY 2/2 C.B (COMPONENT)



D BATT1 C.B

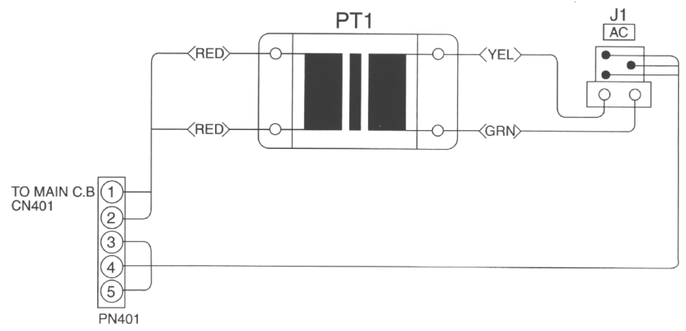


TO MAIN C.B
CN406

PN406

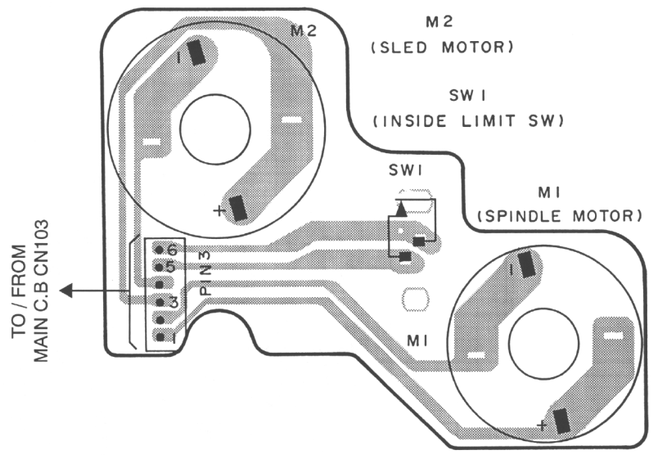
E BATT2 C.B

U : 120V 60Hz
EZ : 230V 50Hz

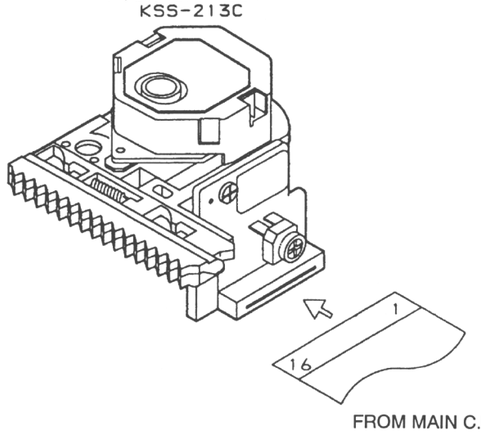


WIRING – 4 (CD MOTOR)

F MOTOR C.B



PICK UP ASSY
KSS-213C



FROM MAIN C.B
CN102

VOLTAGE CHART

IC104 S : STOP, P : PLAY

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	S:0, P:0	17	S:0, P:0
2	S:8.02, P:7.5	18	S:0, P:0
3	S:2.11, P:2.08	19	S:2.1, P:2.08
4	S:2.11, P:2.08	20	S:2.1, P:2.08
5	S:2.11, P:2.08	21	S:3.71, P:3.5
6	S:3.73, P:3.59~3.69	22	S:3.73, P:3.5
7	S:3.73, P:3.4~3.6	23	S:0, P:0
8	S:0, P:0	24	S:0.75, P:0.69
9	S:3.73, P:3.2~3.4	25	S:0.04, P:0.04
10	S:3.73, P:3.7	26	S:0, P:0
11	S:2.11, P:2.08	27	S:3.72, P:3.83
12	S:4.91, P:4.9	28	S:3.72, P:3.23
13	S:7.43, P:7.01	29	S:2.1, P:2.08
14	S:4.96, P:4.95	30	S:2.1, P:2.08
15	S:6.7, P:6.4~6.6	31	S:8.01, P:7.5~7.8
16	S:0, P:0	32	S:0, P:0

Q101 S : STOP, P : PLAY

Pin Name	Voltage (V)
E	S:4.12, P:3.7
C	S:1.52, P:1.89
B	S:3.47, P:2.99

Q105 N : ON, F : OFF

Pin Name	Voltage (V)
E	F:0, N:0
C	F:7.82, N:0.16
B	F:0.16, N:4.34

Q106 N : ON, F : OFF

Pin Name	Voltage (V)
E	F:8.18, N:8.17
C	F:1.1, N:8.16
B	F:7.82, N:7.43

Q107 S : STOP, P : PLAY

Pin Name	Voltage (V)
E	S:8.0, P:7.56
C	S:4.96, P:4.95
B	S:7.39, P:6.93

< CD SECTION >

IC104 S : STOP, P : PLAY

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	S:2.09, P:--	33	S:0.01, P:0.01
2	S:2.09, P:--	34	S:4.13, P:4.08
3	S:2.12, P:--	35	S:3.67, P:0.01
4	S:2.12, P:--	36	S:0.04, P:0.4~0.47
5	S:1.92, P:1.9	37	S:0.02, P:0.03
6	S:2.1, P:2.08	38	S:4.12, P:0.01
7	S:2.1, P:2.07	39	S:0.01, P:0.01
8	S:2.01, P:1.99	40	S:0.01, P:0.17~0.23
9	S:2.01, P:1.99	41	S:1.34, P:1.9
10	S:1.86, P:1.89	42	S:2.01, P:1.99
11	S:2.08, P:2.08	43	S:2.09, P:2.09
12	S:2.06, P:2.04	44	S:2.09, P:2.06
13	S:2.10, P:2.07	45	S:0, P:0.01
14	S:2.10, P:2.08	46	S:2.08, P:2.06
15	S:2.09, P:2.11	47	S:2.1, P:2.04
16	S:2.10, P:1.93	48	S:0, P:0
17	S:2.10, P:2.08	49	S:0.01, P:0.04~0.09
18	S:2.10, P:2.16	50	S:2.08, P:2.07
19	S:2.09, P:2.08	51	S:4.62, P:4.53
20	S:2.10, P:2.0	52	S:4.62, P:4.6
21	S:2.10, P:2.08	53	S:0.55, P:0.54
22	S:0, P:0.01	54	S:0.11, P:4.0
23	S:2.0, P:2.06	55	S:0, P:0.01
24	S:2.0, P:2.06	56	S:4.14, P:4.09
25	S:2.11, P:1.2~1.95	57	S:2.08, P:2.06
26	S:2.11, P:2.08	58	S:2.10, P:2.08
27	S:2.10, P:2.15	59	S:0.66, P:1.78
28	S:2.10, P:2.08	60	S:0.7, P:1.91
29	S:2.10, P:2.04	61	S:1.98, P:1.97
30	S:2.02, P:1.94	62	S:3.48, P:2.99
31	S:1.97, P:2.0	63	S:0, P:0.2
32	S:0.01, P:0.01	64	S:4.15, P:4.09

< CD SECTION >

IC102 S : STOP, P : PLAY

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	S:0.01, P:0.02	33	S:0, P:0.01
2	S:0, P:0.01	34	S:0, P:0
3	S:0, P:1.35	35	S:4.13, P:0.01
4	S:0, P:0.01	36	S:4.03, P:3.98
5	S:1.4, P:1.4	37	S:1.75, P:1.72
6	S:4.14, P:4.08	38	S:0, P:0
7	S:0.06, P:0	39	S:0, P:0
8	S:0, P:0	40	S:1.75, P:1.73
9	S:2.0, P:2.05	41	S:4.03, P:3.98
10	S:2.09, P:2.08	42	S:4.13, P:0.01
11	S:0, P:0.01	43	S:4.14, P:4.08
12	S:0.01, P:0.2~0.26	44	S:1.88, P:1.87
13	S:0.01, P:0.01	45	S:1.51, P:1.49
14	S:4.12, P:0.01	46	S:0, P:0.01
15	S:0.02, P:0.03	47	S:0.1, P:0.1
16	S:0.04, P:0.05	48	S:1.88, P:0.1~0.2
17	S:4.13, P:0.01	49	S:0.01, P:0.1
18	S:4.13, P:4.08	50	S:2.07, P:2.05
19	S:0.01, P:0.01	51	S:0, P:0.01
20	S:0.01, P:0.01	52	S:2.07, P:2.04
21	S:1.88, P:2.16	53	S:0.01, P:0.55~0.64
22	S:0.01, P:4.07	54	S:0.55, P:0.51
23	S:4.14, P:4.08	55	S:0.01, P:0.05
24	S:0.01, P:0.01	56	S:4.62, P:4.6
25	S:0.01, P:0.01	57	S:4.62, P:4.53
26	S:4.14, P:4.08	58	S:4.01, P:3.96
27	S:3.94, P:3.9	59	S:0.01, P:0.01
28	S:0.3, P:0	60	S:2.09, P:2.12
29	S:0.01, P:0.01	61	S:2.13, P:2.12
30	S:4.1, P:0.01	62	S:0, P:0.01
31	S:2.09, P:2.08	63	S:0, P:0.01
32	S:0, P:0.01	64	S:0, P:0.01

< TUNER SECTION >

Q610 N : ON, F : OFF

Pin Name	Voltage (V)
E	N:0.12, F:0.15
C	N:0.13, F:0
B	N:0.47, F:0.03

< TUNER SECTION >

IC702 A : AM, F : FM

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	A:1.3, F:1.31	13	A:4.88, F:4.41
2	A:1.3, F:1.31	14	A:3.18, F:3.69
3	A:4.88, F:4.42	15	A:3.12, F:3.69
4	A:4.88, F:4.42	16	A:0.96, F:0.92
5	A:4.88, F:4.42	17	A:0.96, F:0.92
6	A:0.02, F:0.02	18	A:1.23, F:1.23
7	A:4.88, F:4.42	19	A:1.23, F:1.38
8	A:0.02, F:0.02	20	A:4.84, F:4.27
9	A:0, F:0	21	A:4.89, F:4.37
10	A:1.3, F:1.31	22	A:4.89, F:4.36
11	A:1.29, F:1.31	23	A:0.02, F:0.02
12	A:0.9, F:0.15	24	A:0.02, F:0.91

Q701 RADIO ON

Pin Name	Voltage (V)
E	8.1
C	8.06
B	7.24

Q702 A : AM, F : FM

Pin Name	Voltage (V)
E	A:2.62, F:1.38
C	A:0, F:0
B	A:2.13, F:0.03

Q703 A : AM, F : FM

Pin Name	Voltage (V)
E	A:0.02, F:0.02
C	A:2.11, F:0.03
B	A:0.02, F:4.43

Q704 RADIO ON

Pin Name	Voltage (V)
E	0.02
C	0.11
B	0.78

< TUNER SECTION >

Q705 A : AM, F : FM

Pin Name	Voltage (V)
E	2.04
C	3.76
B	2.7

< SYSTEM CONTROL SECTION >

IC601 S : STANDBY, C : CD/STOP

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	S:0, C:3.85	25	S:4.6, C:4.56
2	S:0, C:0.24	26	S:0.01, C:4.7
3	S:0, C:0.24	27	S:0.01, C:0.21
4	S:0, C:0	28	S:0.01, C:4.72
5	S:4.71, C:4.57	29	S:0, C:0
6	S:0.26, C:0.25	30	S:0.01, C:0.22
7	S:0, C:0	31	S:0.01, C:4.6
8	S:2.25, C:2.22	32	S:5.34, C:0.59
9	S:0.01, C:0.14	33	S:0, C:0.22
10	S:1.93, C:1.68	34	S:0, C:4.75
11	S:4.92, C:2.45	35	S:0, C:0.01
12	S:4.94, C:4.78	36	S:0.01, C:4.75
13	S:5.02, C:4.97	37	S:0.01, C:0.19
14	S:5.02, C:4.97	38	S:0.01, C:0.19
15	S:0, C:0	39	S:0.01, C:4.73
16	S:0.01, C:0.14	40	S:0.01, C:0.18
17	S:0, C:0	41	S:0.01, C:0.18
18	S:0, C:0	42	S:0, C:0
19	S:0.01, C:1.33	43	S:0, P:0.25
20	S:0.01, C:0.04	44	S:0, C:0.25
21	S:0.01, C:0.04	45	S:0, C:3.86
22	S:0, C:0.11	46	S:0, C:0.24
23	S:0, C:0.01	47	S:0, C:0.24
24	S:0, C:0	48	S:0, C:0

Q601 Q-SOUND IND. ON

Pin Name	Voltage (V)
E	0.16
C	0.27
B	1.34

Q602 T-BASS IND. ON

Pin Name	Voltage (V)
E	0.16
C	0.27
B	1.34

Q603 TUNER IND. ON

Pin Name	Voltage (V)
E	0.12
C	0.15
B	4.83

Q604 CD IND. ON

Pin Name	Voltage (V)
E	0.16
C	0.19
B	4.73

Q605 REPEAT IND. ON

Pin Name	Voltage (V)
E	0.16
C	0.18
B	4.67

Q606 S : STANDBY MODE , C : CD

Pin Name	Voltage (V)
E	S:0.01, C:0.15
C	S:4.7, C:4.58
B	S:0.01, C:0.14

Q607 S : STANDBY MODE , C : CD

Pin Name	Voltage (V)
E	S:5.07, C:5.02
C	S:5.05, C:5.0
B	S:4.5, C:4.44

Q608 S : STANDBY MODE , C : CD

Pin Name	Voltage (V)
E	S:0.01, C:0.15
C	S:0.03, C:0.18
B	S:1.32, C:1.34

< SYSTEM CONTROL SECTION >

Q609 CD MODE

Pin Name	Voltage (V)
E	5.53
C	5.5
B	4.72

< AUDIO SECTION >

IC401 N : Q-SOUND ON, F : Q-SOUND OFF

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	N:3.6, F:3.6	9	N:3.72, F:3.72
2	N:3.68, F:3.68	10	N:0.13, F:0.13
3	N:4.52, F:0.18	11	N:4.46, F:4.46
4	N:1.5, F:1.5	12	N:4.46, F:4.46
5	N:3.73, F:3.73	13	N:4.38, F:4.38
6	N:3.59, F:3.6	14	N:4.48, F:4.48
7	N:3.72, F:3.72	15	N:3.6, F:3.6
8	N:0, F:0	16	N:8.19, F:8.19

IC402

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	11.36	7	0
2	5.9	8	0.55
3	10.95	9	6.1
4	0	10	11
5	0.55	11	5.92
6	0	12	11.95

IC403

Pin No.	Voltage (V)
1	0
2	7.22
3	5.58

Q401 N : CD MODE STOP MUTE ON,
F : CD MODE PLAY MUTE OFF

Pin Name	Voltage (V)
E	N:0, F:0
C	N:0, F:0
B	N:0.63, F:0

IC404

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	2.76	13	3.49
2	2.76	14	0
3	2.76	15	2.91
4	0	16	2.85
5	2.76	17	2.87
6	2.88	18	2.86
7	2.86	19	2.88
8	2.87	20	2.76
9	2.84	21	0
10	2.91	22	2.76
11	2.89	23	2.76
12	5.83	24	2.75

Q402 N : CD MODE STOP MUTE ON,
F : CD MODE PLAY MUTE OFF

Pin Name	Voltage (V)
E	N:0, F:0
C	N:0, F:0
B	N:0.63, F:0

Q403 S : STANDBY, N : ON

Pin Name	Voltage (V)
E	S:12.7, N:6.84
C	S:13.35, N:7.69
B	S:13.35, N:7.54

Q404 TAPE ON

Pin Name	Voltage (V)
E	11
C	10.2
B	10.47

Q405 TAPE ON

Pin Name	Voltage (V)
E	10.8
C	10.8
B	10.15

< CASSETTE SECTION >

IC201 CASSETTE PLAY MODE

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	3.44	5	3.4
2	3.45	6	3.45
3	3.4	7	3.44
4	0	8	7.74

IC202 CASSETTE REC MODE

Pin No.	Voltage (V)	Pin No.	Voltage (V)
1	3.77	5	3.0
2	3.77	6	3.77
3	2.99	7	3.77
4	0	8	7.58

Q201 P : PLAY, R : REC

Pin Name	Voltage (V)
S	P:0, R:0
G	P:0, R:7.7
D	P:0, R:0.01

Q202 P : PLAY, R : REC

Pin Name	Voltage (V)
S	P:0, R:0
G	P:0, R:7.7
D	P:0, R:0.01

Q205

Pin Name	Voltage (V)
E	0
C	0.03
B	0.64

Q206

Pin Name	Voltage (V)
E	8.14
C	8.04
B	7.38

Q208

Pin Name	Voltage (V)
E	8.18
C	8.14
B	7.37

Q209

Pin Name	Voltage (V)
E	0.05
C	6.77
B	-1.95

Q210

Pin Name	Voltage (V)
E	0
C	0.01
B	0.74

Q211

Pin Name	Voltage (V)
E	0
C	0.01
B	0.74

Q406

Pin Name	Voltage (V)
E	0
C	0.01
B	4.53

Q407

Pin Name	Voltage (V)
E	10.84
C	8.18
B	10.2

Q408

Pin Name	Voltage (V)
E	8.04
C	10.1
B	7.45

Q409

Pin Name	Voltage (V)
E	8.17
C	5.83
B	7.45

Q410

Pin Name	Voltage (V)
E	5.12
C	7.46
B	5.68

Q413

Pin Name	Voltage (V)
E	0
C	0.05
B	0.68

Q414 P : PLAY, R : REC

Pin Name	Voltage (V)
E	P:0, R:0
C	P:5.04, R:0.02
B	P:0, R:5.52

Q415

Pin Name	Voltage (V)
E	0
C	10.01
B	5.29

Q416

Pin Name	Voltage (V)
E	10.77
C	10.72
B	10.01

IC DESCRIPTION

IC, LC78622ED

Pin No.	Pin Name	I/O	Description
1	DEFI	I	Defect detection signal (DEF) input. ("L" is applied when not used.)
2	TAI	I	For PLL/Test input. A pull-down resistor is incorporated.
3	ODO	O	Phase comparison output to control the external VCO.
4	V_VSS	–	Ground of the built-in VCO. Normally, 0V.
5	I_SET	I	For the connection of a resistor which adjusts the PDO output current.
6	V_VDD	–	Power supply of the built-in VCO.
7	FR	I	Adjusts the VCO frequency range.
8	VSS	–	Ground of digital circuits. Normally, 0V.
9	EFMO	O	For slice level control/EFM signal output.
10	EFMIN	I	EFM signal input.
11	TEST2	I	Test input. A pull-down resistor is incorporated. Be sure to connect this to 0V.
12	CLV+	O	Disc motor control tri-state outputs.
13	CLV-		
14	$\overline{V/P}$	O	Output to monitor the automatic switching between the rough servo control and phase servo control. "H" :Rough servo, "L": Phase servo.
15	HFL	I	Track detection signal input. Schmitt trigger input.
16	TES	I	Track error signal input. Schmitt trigger input.
17	TOFF	O	Tracking off output.
18	TGL	O	Tracking gain switching output. "L" raises the gain.
19	JP+	O	Track jump control tri-state outputs.
20	JP-		
21	PCK	O	Monitors the clock signal for EFM data playback. (Not used)
22	F_SE-D	O	Sync signal detection output. Goes "H" when the sync signal detected from the EFM signal matches the sync signal generated internally. (Not used)
23	VDD	–	Power supply of digital circuits.
24	CONT1	O	Serial data command sled signal.
25	CONT2	O	Output terminal from microproccessor.
26	CONT3	–	Not connected.
27	CONT4	I/O	CD pickup inside limit switch.
28	CONT5	–	Not connected.
29	EMPH	O	De-emphasis monitor. "H": when playing a deemphasis disc. (Not used)
30	C2F	O	C2 flag output. (Not used)
31	D_OUT	O	Outputs a digital OUT signal. (EIAJ format) (Not used)
32	TEST3	I	Test input. A pull-down resistor is incorporated. Be sure to connect this to 0V.
33	TEST4		
34	NC	–	Not connected. Set to open.
35	MUTEL	O	Lch 1-bit DAC/Lch muting output. (Not used)
36	L_VDD	–	Lch power supply.
37	L_CHO	O	Lch output.
38	L_VSS	–	Lch ground. Normally, 0V.
39	R_VSS	–	Rch 1-bit DAC/Rch ground. Normally, 0V.

Pin No.	Pin Name	I/O	Description
40	R_CHO	O	Rch output.
41	R_VDD	–	Rch power supply.
42	MUTER	O	Rch muting output. (Not used)
43	X_VDD	–	Power supply of crystal oscillator.
44	X_OUT	O	For the connection of a 16.93MHz crystal oscillator.
45	X_IN	I	
46	X_VSS	–	Ground of crystal oscillator. Normally, 0V.
47	SBSY	O	Subcode block sync signal output. (Not used)
48	EFLG	O	C1,C2,single,duplex correction monitor. (Not used)
49	PW	O	Output of subcodes P,Q,R,S,T,U and W. (Not used)
50	SESY	O	Subcode frame sync signal output. Falls when the subcode is set to the standby state. (Not used)
51	SBCK	I	Subcode read-out clock input. Schmitt trigger input.("L" is applied when not used.)
52	FSX	O	7.35 kHz sync signal output obtained by dividing the oscillator frequency. (Not used)
53	WRQ	O	Subcode Q standby output.
54	RWC	I	Read/write control input. Schmitt trigger input.
55	SQOUT	O	Subcode Q output.
56	COIN	I	Command input from the microprocessor.
57	$\overline{\text{COCK}}$	I	Command input retrieval clock or subcode retrieval clock input from SQOUT. Schmitt trigger input.
58	$\overline{\text{RES}}$	I	LC78622 reset input. Set to "L" when power is supplied.
59	TST11	O	Test output. Set to open (normally, "L" output.) (Not used)
60	16M	O	16.93MHz output.
61	4.2M	O	4.236 MHz output.
62	TEST5	I	Test input. A pull-down resistor is incorporated. Be sure to connect to 0 V.
63	$\overline{\text{CS}}$	I	Chip select input. A pull-down resistor is incorporated.
64	TEST1	I	Test input with no pull-down resistor. Be sure to connect this to 0 V.

IC, LA9241ML

Pin No.	Pin Name	I/O	Description
1	FIN2	O	For the connection of the pickup photodiode. Addition to the FIN1 pin creates an RF signal and subtraction from it create an EF signal.
2	FIN1	O	For the connection of the pickup photodiode.
3	E	O	For the connection of the pickup photodiode. Subtraction from the F pin creates a TE signal.
4	F	O	For the connection of the pickup photodiode.
5	TB	I	Inputs the DC components in the TE signal.
6	TE–	O	For the connection of a resistor which sets the gain of the TE signal between this pin and the TE pin.
7	TE	O	TE signal output.
8	TESI	I	TES (track error sense) comparator input.The TE signal is passed through a BPF.
9	SCI	I	Shock detection input.
10	TH	I	Sets the time constant for the tracking gain.
11	TA	O	TA amp output.
12	TD–	I	Composes the tracking phase compensation constant between the TD and VR pins.
13	TD	O	Sets the tracking phase compensation.
14	JP	I	Sets the amplitude of the tracking jump signal (kick pulses).
15	TO	O	Tracking control signal output.
16	FD	O	Focusing control signal output.
17	FD–	I	Composes the focusing phase compensation constant between the FD and FA pins.
18	FA	O	Composes the focusing phase compensation constant between the FD- and FA- pins.
19	FA–	I	Composes the focusing phase compensation constant between the FA and FE pins.
20	FE	O	FE signal output.
21	FE–	I	For the connection of a resistor whichs sets the gain of the FE signal between this pin and the TE pin.
22	A-GND	O	Ground of analog signals.
23	SP	O	Single-ended output of the signals input to the CV+ and CV- pins.
24	SPI	I	Spindle amp input.
25	SPG	I	For the connection of a resistor which sets the gain in the spindle 12cm mode.
26	SP–	I	For the connection of the spindle phase compensation constant with the SPD pin.
27	SP D	O	Spindle control signal output.
28	SLED	I	For the connection of sled phase compensation constant.
29	SLD	O	Sled control signal output.
30	SL–	I	Sled feed signal input from the microprocessor.
31	SL+		
32	JP–	I	Tracking signal input from the DSP.
33	JP+		
34	TGL	I	Tracking gain control signal input from the DSP. Low gain when TGL is "H".
35	TOFF	I	Tracking off control signal input from the DSP. Off when TOFF is "H".
36	TES	O	Outputs the TES signal to the DSP.

Pin No.	Pin Name	I/O	Description
37	HFL	O	The HFL (high frequency level) signal is used to judge whether the main beam is positioned on the pit or on the mirror.
38	SLOF	I	Sled servo off control input.
39	CV–	I	CLV error signal input from the DSP.
40	CV+		
41	RFSM	O	RF output.
42	RSF–	O	Sets the RF gain and the EFM signal's 3T compensation constant together with the RFSM pin.
43	SLC	O	The SLC (slice level control) signal is output to control the DSP's data slice level of the RF waveform.
44	SL1	I	Input to control the DSP's data slice level.
45	D-GND	–	Ground of digital signals.
46	FSC	O	Output for the focus search smoothing capacitor.
47	TBC	I	The TBC (tracking balance control) signal sets the EF balance variation range.
48	NC	–	Not connected.
49	DEF	O	Disc defect detection output.
50	CLK	I	Reference clock input. 4.23 MHz is input from the DSP.
51	CL	I	Microprocessor command clock input.
52	DAT	I	Microprocessor command data input.
53	CE	I	Microprocessor chip enable input.
54	DRF	O	DRF (detect RF) is an output to detect the RF level.
55	FSS	I	The FSS (focus search select) signal switches the focus search modes (+/-search / +search with respect to the reference voltage).
56	VCC2	–	VCC of servo and digital circuits.
57	REF1	–	For the connection of bypass capacitor for the reference voltage.
58	VR	O	Reference voltage output.
59	LP2	–	Sets the time constant for disc defect detection.
60	PH1	–	For the connection of a capacitor to hold the RF signal peak.
61	BH1	–	For the connection of a capacitor to hold the RF signal bottom.
62	LDO	O	APC circuit output.
63	LDS	I	APC circuit input.

IC, LC865516A-5K51

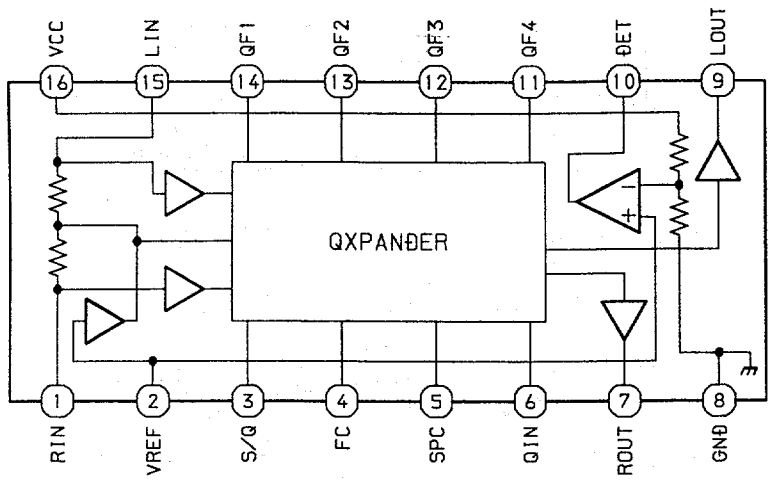
Pin No.	Pin Name	I/O	Description
1~3	SEG E~G	O	LED segment E~G control output.
4	NC	–	Not connected.
5	I-RES	I	Micromputer reset.
6	XT1(IN)	I	Connected to 32.768kHz crystal oscillation.
7	NC	–	Not connected.
8	XT2(OUT)	O	Connected to 32.768kHz crystal oscillation.
9	VSS	–	GND.
10	CF1(IN)	I	Connected to 5.76MHz ceramic filter.
11	CF2(OUT)	O	Connected to 5.76MHz ceramic filter.
12	VDD	–	Power supply for microcomputer (+5V).
13,14	I-KEY0,1	I	Key AD input.
15	I-MOTOR	I	Deck mecha motor status input.
16	I-CD(SW)	I	CD door switch status detection input.
17	NC	–	Clock shift output of the microcomputer.
18	NC	–	Not connected.
19	O-BASS.LED	O	BASS LED ON/OFF control output.
20	O-OS.LED	O	QS LED ON/OFF control output.
21	NC	–	Not connected.
22	I-DRF	I	CD RF level detection input.
23	I-WRQ	I	CD sub-code Q standby input.
24	NC	–	Not connected.
25	I-REM	I	Remote control input.
26	O-CD.ON	O	CD PWR control output.
27	O-TU.ON	O	TUNER PWR control output.
28	O-P.CONT	O	Power supply control output.
29	NC	–	Not connected.
30	O-QS.CONT	O	Q-SOUND LED ON/OFF control output.
31	O-MUTE	O	Main mute output.
32	O-DIGIT	O	7 segment LED power output.
33	O-SEG.REPEAT	O	REPEAT LED ON/OFF control output.
34	O-CO IN	O	CD command output.
35	I-SQOUT	I	CD subcode Q input.
36	O-CQCK	O	Clock for CD commands/sub codes.
37	O-RWC	O	CD read/write control output and TU CE.
38	O-DATA	O	Data output to sound processor IC (M62495FP).
39	O-CD.LED	O	CD LED ON/OFF control output.
40	O-TU.LED	O	TUNER LED ON/OFF control output.
41	O-TA.LED	O	RADIO LED ON/OFF control output. (Not used)
42,48	NC	–	Not connected.
43	SEG DP	O	LED segment DP control output.
44~47	SEGA~D	O	LED segment A~D control output.

IC, BA6898S

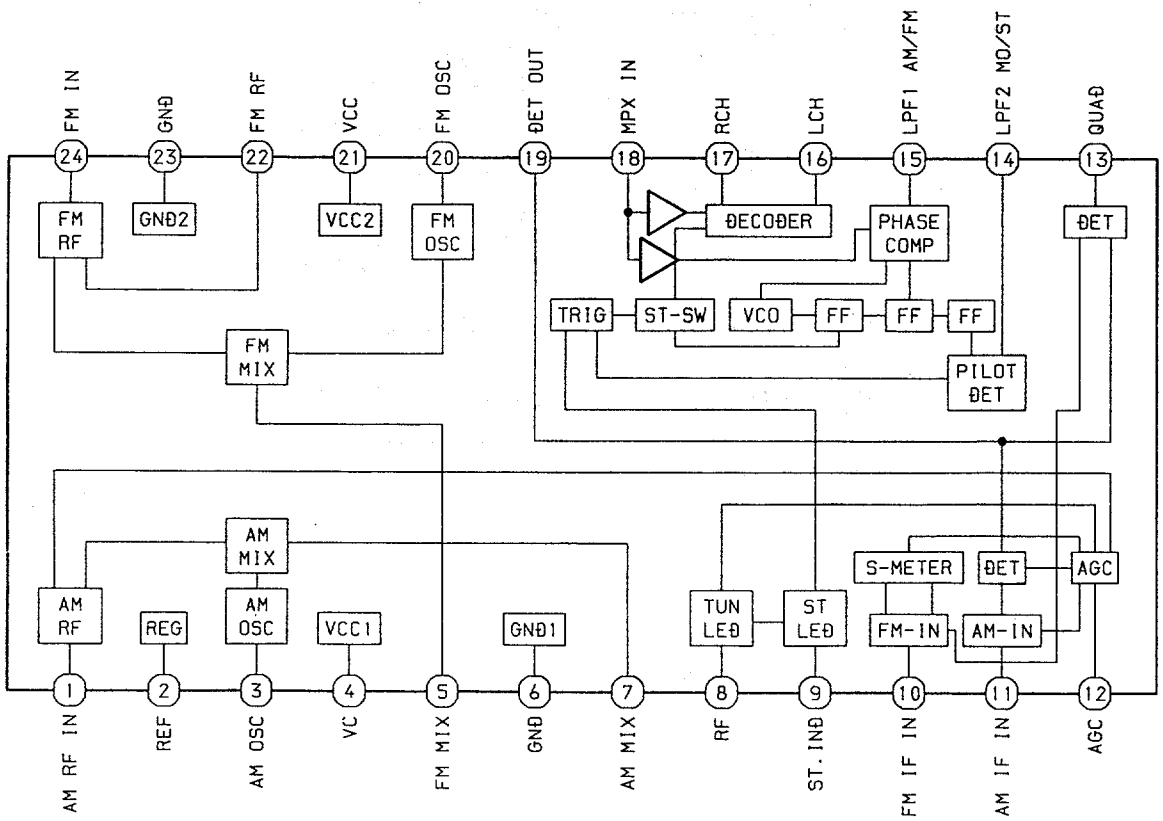
Pin No.	Pin Name	I/O	Description
1	NC	–	Not connected.
2	VCC	–	Power supply terminal.
3	VR	I	Input bias amplifier.
4	VIN1'	I	Input terminal for driver channel 1 gain adjustment.
5	IN	I	Input driver channel 1.
6	FOCUS +	O	Positive output of driver channel 1.
7	FOCUS -	O	Negative output of driver channel 1.
8	GND	–	Sub straight ground terminal.
9	SPINDLE (-)	O	Negative output of driver channel 2.
10	SPINDLE (+)	O	Positive output of driver channel 2.
11	IN	I	Input terminal for driver channel 1 gain adjustment.
12	RESET	O	Output reset.
13	REG-B	—	Connected to base terminal of external regulator transistor .
14	REG OUT	O	Output constant voltage. (Connected to collector of external regulator transistor)
15	MUTE	I	Mute control terminal.
16	GND	—	Sub straight ground terminal.
17	NC	—	Not connected.
18	GND	—	GND
19	VIN3'	I	Input terminal for driver channel 3 gain adjustment.
20	IN	I	Input driver channel 3.
21	SLED (+)	O	Negative output of driver channel 3.
22	SLED (-)	O	Positive output of driver channel 3.
23	GND	—	Sub straight ground terminal.
24	OP OUT	O	Ope-amp. output.
25	OP IN(-)	I	Ope-amp. negative input. (Not used)
26	NC	—	Not connected.
27	TRACKING (-)	O	Negative output of driver channel 4.
28	TRACKING (+)	O	Positive output of driver channel 4.
29	IN	I	Input driver channel 4.
30	VIN4'	I	Input terminal for driver channel 4 gain adjustment.
31	VCC	—	Power supply terminal.
32	SUB	—	Sub straight ground terminal.

IC BLOCK DIAGRAM

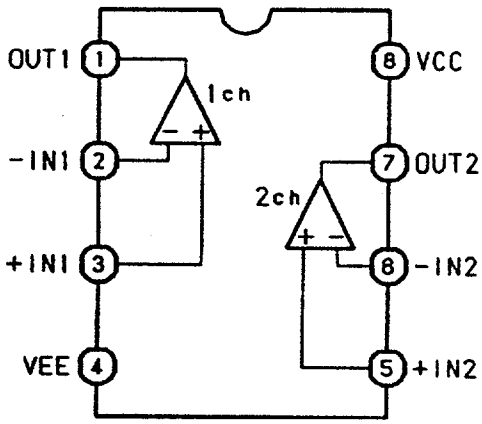
IC, MM1434XF



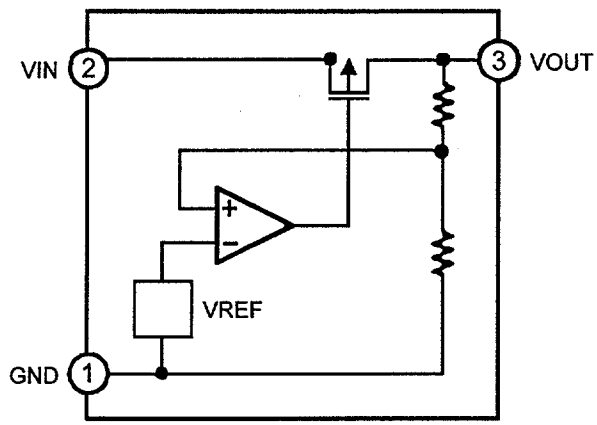
IC, LA1828



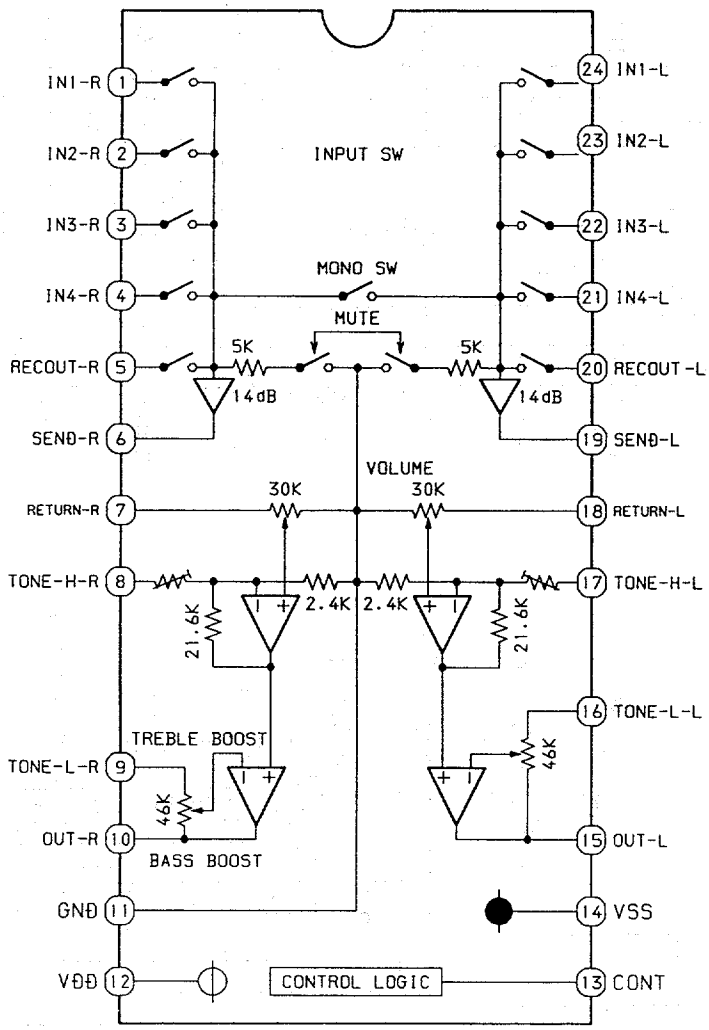
IC, BA4560F



IC, NJU7201L55



IC, M62495FP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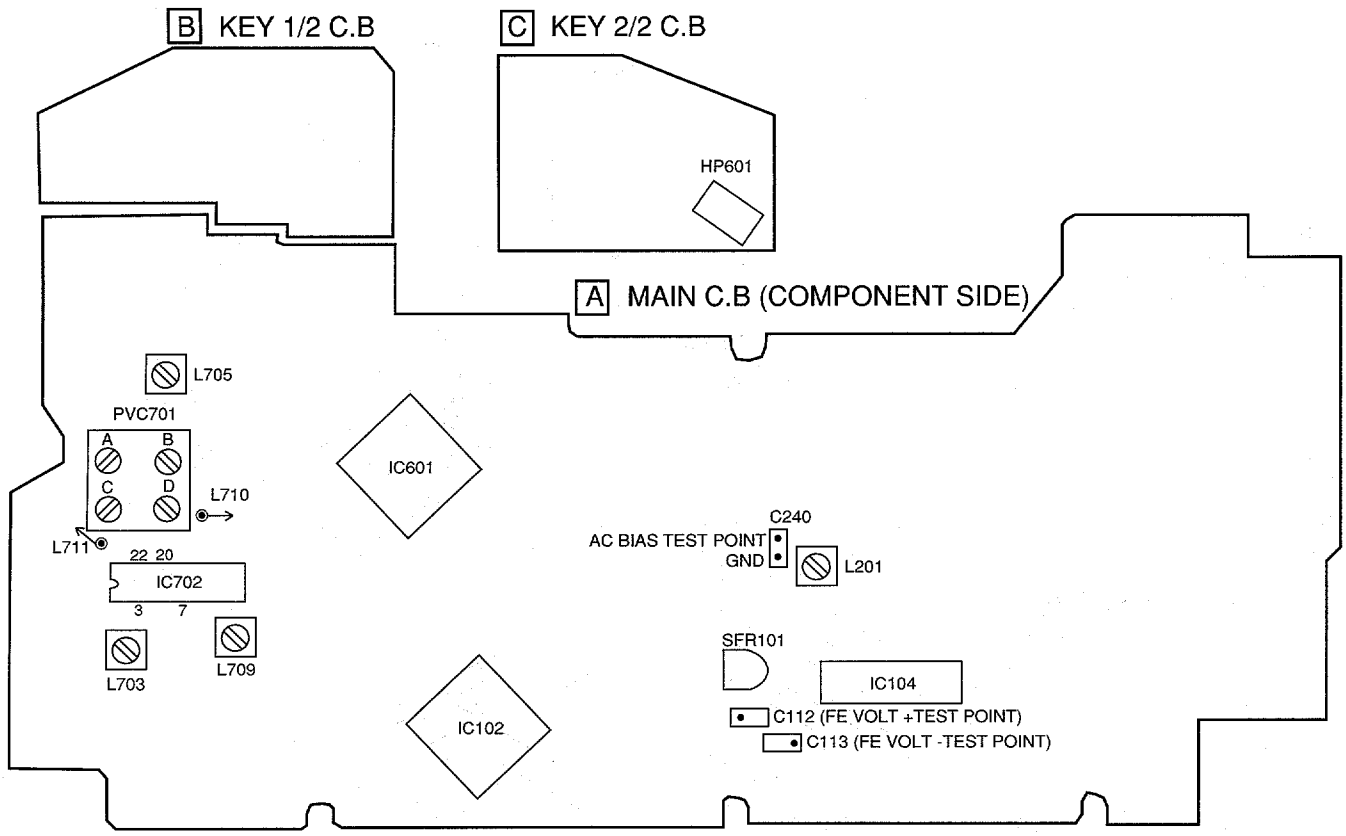
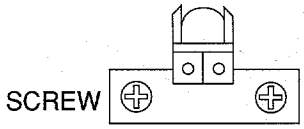
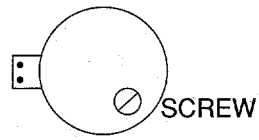
IN2-R
IN3-R
IN4-R
RECOUT-R
SENΘ-R
RETURN-R
TONE-H-R
TONE-L-R
OUT-R
GNΘ
VΘΘ
INPUT SW
MONO SW
MUTE
5K
14dB
VOLUME
30K
2.4K
21.6K
TREBLE BOOST
46K
BASS BOOST
CONTROL LOGIC
IN1-L
IN2-L
IN3-L
IN4-L
RECOUT-L
SENΘ-L
RETURN-L
TONE-H-L
TONE-L-L
OUT-L
VSS
CONT

ELECTRICAL ADJUSTMENT





CASSETTE DECK HEAD



CASSETTE DECK MOTOR

< RADIO SECTION >

1. FM IF Adjustment
   - Test Point: IC702 (LA1828) Pin 20
   - Adjustment location: L703, L709

   L703, L709 ..... 10.7MHz ± 0.2MHz

2. FM Frequency Range Adjustment
   - Test Point: IC702 (LA1828) Pin 22
   - Adjustment location: L710, PVC701(D)

   L710 ..... U: 87.0MHz
   L710 ..... EZ: 87.35MHz
   PVC701(D) U:109.0MHz
   PVC701(D) EZ:108.25MHz

3. FM Tracking Adjustment
   - Test Point: IC702 (LA1828) Pin 22
   - Adjustment location: L711, PVC701(C)

   L711 ..... 88MHz
   PVC701(C) 108MHz

4. AM IF Adjustment
   - Test Point: IC702 (LA1828) Pin 3
   - Adjustment location: L704

   L704 ..... 455kHz

5. AM Frequency Range Adjustment
   - Test Point: IC702 (LA1828) Pin 7
   - Adjustment location: L705, PVC701(B)

   L705 ..... U:517kHz
   L705 ..... EZ:515kHz
   PVC701(B) U:1750kHz
   PVC701(B) EZ:1635kHz

6. AM Tracking Adjustment
   - Test Point: IC702 (LA1828) Pin 7
   - Adjustment location: L706 (BAR ANT), PVC701(A)

   L706 (BAR ANT) 600kHz
   PVC701(A) 1400kHz

< TAPE RECORDER SECTION >

7. Bias Frequency Adjustment
   • Test point: C240
   • Adjustment location: L201
   • Input: 14~15Vrms.
   L201.....75Hz ± 500Hz

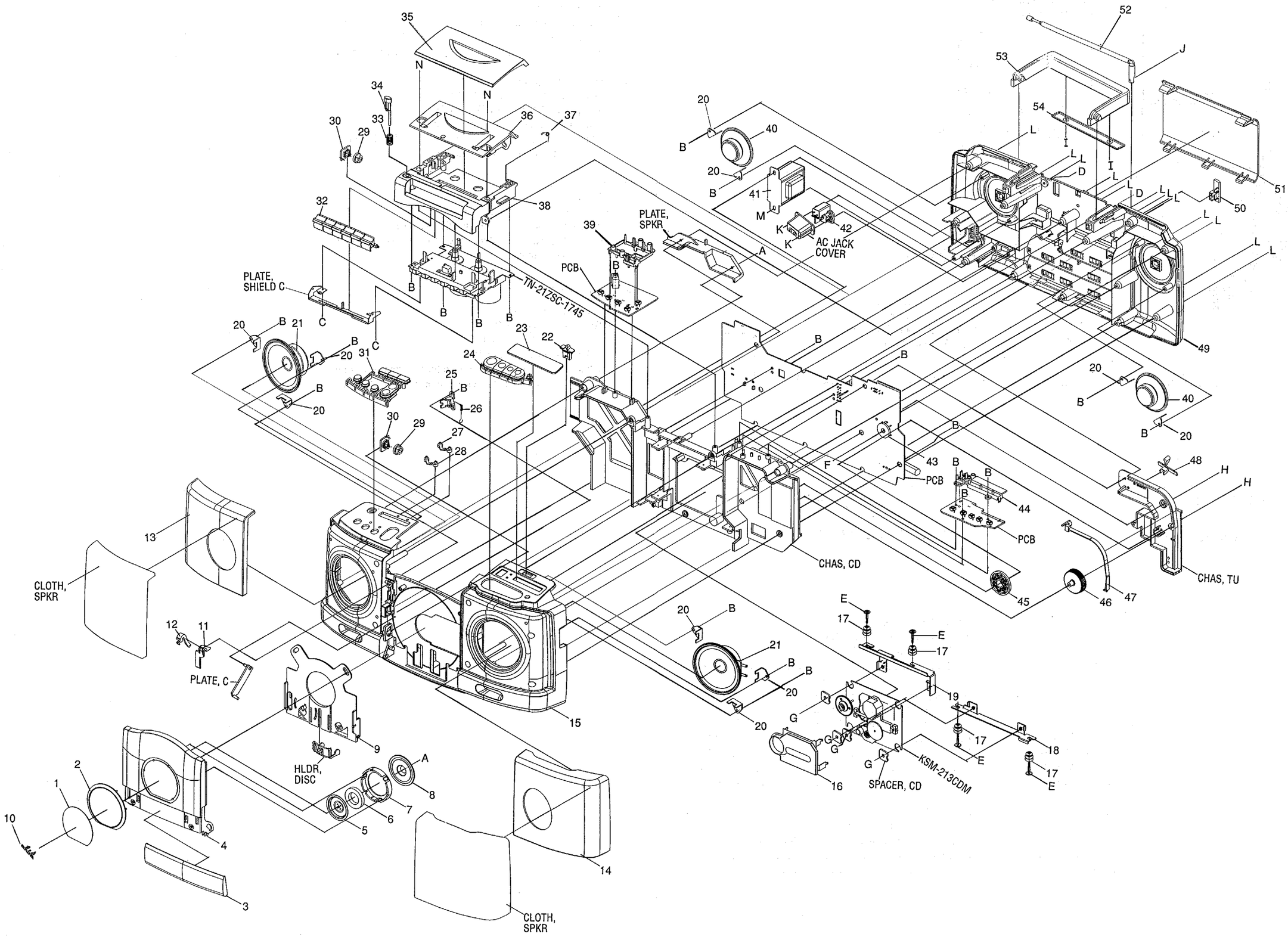
8. Tape speed Adjustment
   • Test tape: TTA-100 (TTA-111S)
   • Test point: PHONES JACK (HP601)
   • Adjustment location: SFR of deck motor
   Method: Play back the test tape and adjust so that the output frequency is 3000Hz ± 30Hz.

9. Azimuth Adjustment
   • Test tape: TTA-320 (TTA-113B)
   • Test point: PHONES JACK (HP601)
   • Adjustment location: Azimuth adjustment screw
   Method: Play back the test tape and adjust so that the output is maximum.

< CD SECTION >

10. FE Balance Adjustment
    • Test tape: C112(FE VOLT +)
      C113(FE VOLT -)
    • Adjustment location: SFR101
    Method: Connect the oscilloscope to the test point and adjust SFR101 so that the test point becomes 0~-10mV.

MECHANICAL EXPLODED VIEW 1 / 1



MECHANICAL PARTS LIST 1 / 1

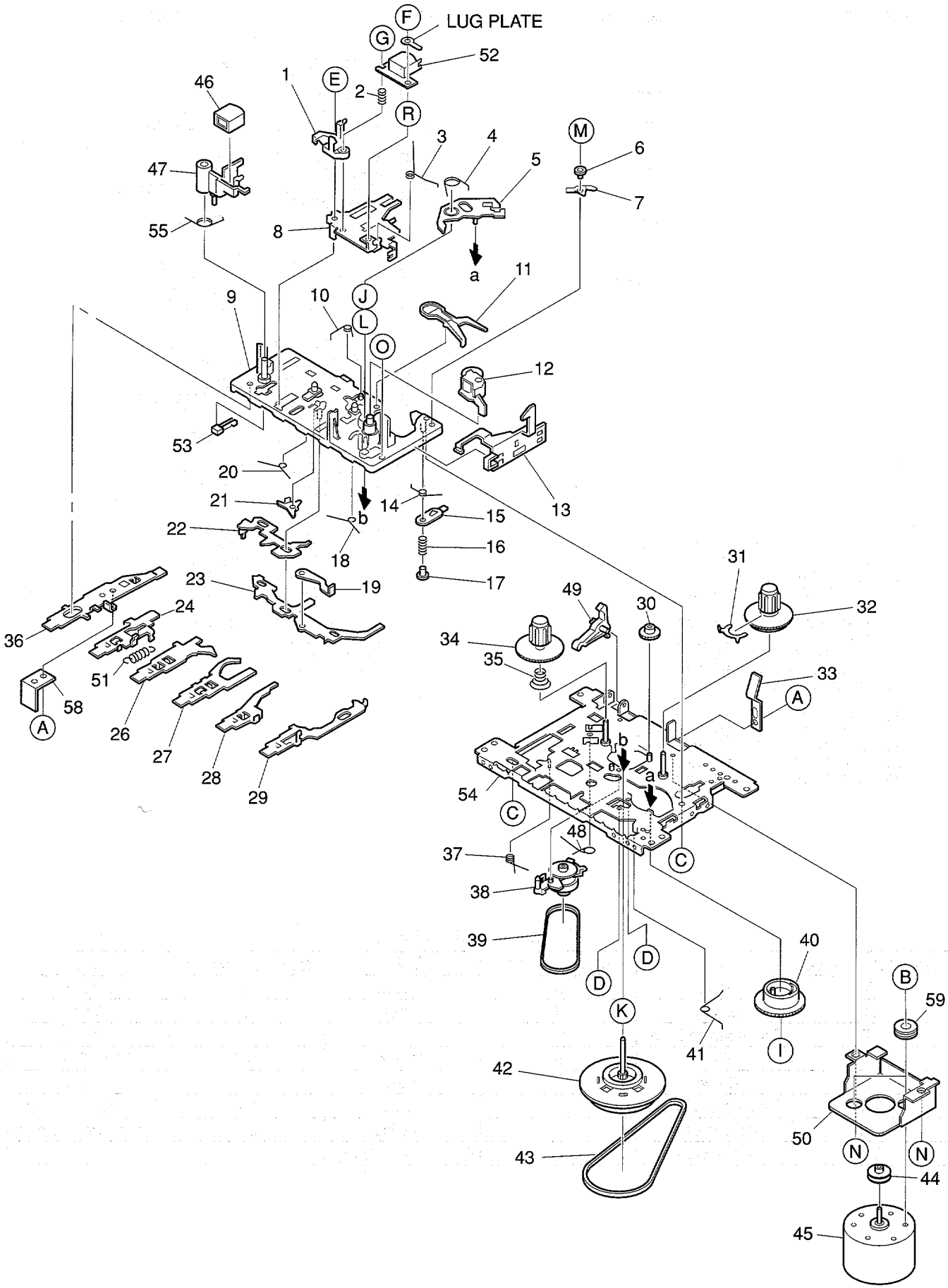
If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8Z-CD7-028-010		PLATE,CD
2	8Z-CD7-205-010		PLATE,CD
3	8Z-CD7-010-010		COVER,CD DOOR
4	8Z-CD7-005-010		BOX,CD
5	87-CD4-219-010		PLATE,MAGNET
6	87-036-368-010		MAGNET
7	84-CD8-204-010		HLDR,CD CHUCK
8	87-CD4-238-010		BASE,CHUCK
9	8Z-CD7-027-010		PANEL,CD
10	87-B00-010-010		BADGE,AIWA 30.5-5.2 S 2.5 L
11	88-CD7-208-010		LEVER,CD B
12	88-CD7-203-010		LEVER,CD A
13	8Z-CD7-022-010		GRILLE,SPKR L<U>
13	8Z-CD7-051-010		FRAME,SPKR L<EZ>
14	8Z-CD7-023-010		BGRILLE,SPKR R<U>
14	8Z-CD7-052-010		FRAME,SPKR R<EZ>
15	8Z-CD7-001-010		CABI,FRONT<U>
15	8Z-CD7-050-010		CABI,FRONT EZ<EZ>
16	85-CD7-079-010		COVER,CD MECHA
17	88-CT6-206-010		CUSHION,CD
18	88-CD7-218-010		HLDR,CD B
19	87-CD4-217-010		HLDR,CD A
20	87-CD4-202-010		HLDR,SPKR
21	8Z-CD7-608-010		SPKR,F 3'60HM
22	8Z-CD7-014-010		KNOB,SL BAND
23	8Z-CD7-011-010		WINDOW,DISP<U>
23	8Z-CD7-054-010		WINDOW,DISP<EZ>
24	8Z-CD7-019-010		KEY,CD
25	88-CD7-226-010		CD PLATE D
26	87-CD7-229-010		SPR-E,BOX CD
27	8Z-CD7-024-010		LENS,FUNC
28	8Z-CD7-021-010		LENS,VOL
29	84-CD5-215-010		GEAR
30	84-CD5-216-010		BRACKET
31	8Z-CD7-015-010		KEY,VOL
32	8Z-CD7-026-010		KEY,CASS
33	88-CD7-228-010		SPR-C,KNOB CD
34	8Z-CD7-017-010		BTN,CD OPEN
35	8Z-CD7-008-010		LID,CHASS
36	8Z-CD7-004-010		BOX,CHASS
37	88-CD7-206-010		SPR-T,CASS
38	8Z-CD7-003-010		CHAS,CASS
39	8Z-CD7-208-010		HLDR,VOL
40	8Z-CD7-609-010		SPKR,F 2.25' 40HM
⚠ 41	88-CD7-603-010		PT,U 8CD-7<U>
⚠ 41	88-CD7-604-010		PT,E 8CD-7<EZ>
⚠ 42	87-A60-177-010		JACK,AC U<U>
⚠ 42	87-A60-178-010		JACK,AC E W/SW<EZ>
43	88-CD7-212-010		GEAR,PVC
44	8Z-CD7-203-010		HLDR,DISP
45	88-CD7-213-010		GEAR,RELAY
46	8Z-CD7-018-010		KNOB,RTRY TU
47	8Z-CD7-012-010		POINTER,TU
48	8Z-CD7-206-010		LEVER,BAND
49	8Z-CD7-002-010		CABI,REAR
50	88-CD7-036-010		KNOB,SL MST U
51	8Z-CD7-009-010		LID,BAT
52	88-CD7-632-010		ANT,ROD FM
53	8Z-CD7-006-010		ARM-HANDLE,MAIN
54	8Z-CD7-007-010		COVER,HANDLE
A	87-741-094-410		UT2+3-6
B	87-741-095-410		UT2+3-8 GLD
C	87-261-037-410		V+2-10 GLD
D	87-744-095-410		UT2+3-8 CR
E	81-CD5-204-110		CD SCREW DIA 2.6-L17MM
F	87-264-073-410		V+2.6-6
G	87-261-093-410		V+3-5 GLD
H	87-741-096-410		UT2+3-10
I	87-724-095-410		QT2+3-8 CR
J	87-485-095-410		VWS+3-8 NI
K	87-755-076-410		VT2+2.6-23
L	87-753-103-410		VT2-3-25
M	87-761-097-410		VFT2+3-10 GLD
N	87-743-093-410		UT2+3-10 BLK

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Sliver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange		

TAPE MECHANISM EXPLODED VIEW 1 / 1

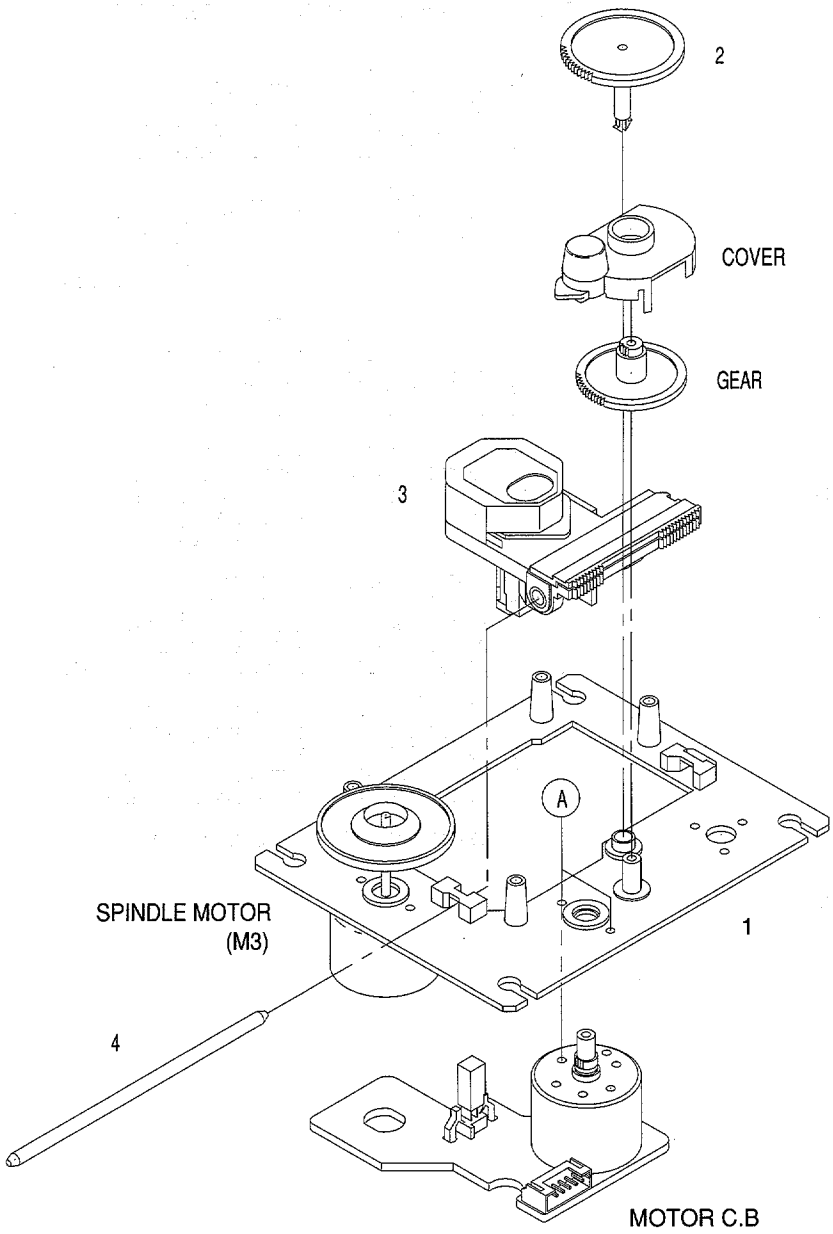


TAPE MECHANISM PARTS LIST 1 / 1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S1-921-030-4A0		HEAD BASE
2	S1-821-030-070		AZIMUTH SPRING
3	S1-921-030-090		PANEL P SPRING
4	S1-921-260-050		GEAR PLATE SPRING
5	S1-921-265-020		GEAR PLATE ASSY
6	S1-921-140-370		P ARM COLLER
7	S1-921-140-340		P ARM
8	S1-921-030-110		HEAD PANEL
9	S1-921-143-010		BASE ASSY
10	S1-921-141-8A0		M CONTROL SPRING
11	S1-921-260-4A0		SENSING LEVER
12	S1-921-043-100		PINCH ROLLER ARM ASSY
13	S1-921-130-010		EJECT SLIDE LEVER
14	S1-921-141-3A0		P CONTROL SPRING
15	S1-921-140-550		PAUSE LEVER(E)
16	S1-921-140-120		PAUSE LEVER SPRING
17	S1-921-140-110		PAUSE STOPPER
18	S1-921-140-150		BUTTON LEVER SPRING(B)
19	S1-821-011-590		E KICK LEVER
20	S1-921-140-140		BUTTON LEVER SPRING(A)
21	S1-921-140-200		PR STOPPER
22	S1-921-140-090		SWITCH ACTUATOR
23	S1-921-140-080		PUSH BUTTON ACTUATOR
24	S1-921-140-230		PLAY BUTTON LEVER
26	S1-921-140-240		REW BUTTON LEVER
27	S1-921-140-250		FF BUTTON LEVER
28	S1-921-140-260		STOP BUTTON LEVER
29	S1-921-140-610		PAUSE BUTTON LEVER
30	S1-821-100-700		FF GEAR
31	S1-921-050-060		SENSER
32	S1-921-053-030		TAKE UP REEL ASSY
33	S1-821-100-980		PACK SPRING
34	S1-921-053-040		SUPPLY REEL ASSY
35	S1-821-100-990		BACK TENSION SPRING
36	S1-921-140-220		REC BUTTON LEVER
37	S1-921-140-170		P.S.LEVER SPRING
38	S1-921-073-040		RF CLUTCH ASSY
39	S1-921-070-030		RF BELT
40	S1-921-260-020		CAM GEAR
41	S1-921-140-160		E ACTUATOR SPRING
42	S1-921-093-040		FLYWHEEL ASSY
43	S1-821-121-610		MAIN BELT
44	S1-921-120-010		MOTOR PULLEY
45	S6-002-030-220		MOTOR EG530AD-2B
46	S6-209-100-100		E HEAD PH-K380-MS1
47	S1-921-030-050		MG ARM
48	S1-921-140-210		REC BUTTON LEVER SPRING
49	S1-821-100-690		RECORD SAFETY LEVER
50	S1-921-120-570		MOTOR BRACKET
51	S1-821-010-500		PLAY BUTTON LEVER SPRING
52	S6-201-011-110		R.P HEAD
53	S6-401-011-490		LEAF SW MSW-1541T
54	S1-921-015-010		CHASSIS ASSY
55	S1-921-030-100		MG ARM SPRING
58	S1-510-020-020		REC SPRING PLATE
59	S1-821-120-660		MOTOR RUBBER
A	S9-P04-200-310		TAPPING SCREW 2-3
B	S1-851-140-180		MOTOR COLLER SCREW
C	S9-679-000-000		P TAP SCREW M2-5
D	S9-999-180-090		TAP SCREW M2-4.5
E	S9-004-000-000		SCREW M2-6
F	S9-P01-200-310		+ SCREW M2-3
G	S9-922-000-000		AZIMUTH SCREW M2-8
I	S9-422-000-000		P WASHER CUT 12-3.8-0.3
J	S9-999-030-130		P WASHER CUT 1.45-3.8-0.
K	S9-882-000-000		P WASHER 2-3.5-0.4
L	S9-999-000-030		P WASHER2.1-4-0.13
M	S9-999-200-410		P TAP SCREW M2-3
N	S9-180-000-000		C TAPPING SCREW M2-4
O	S9-P05-200-810		S TAPPING SCREW M2-8
R	S9-W13-000-010		Y WASHER PB0.1T

CD MECHANISM EXPLODED VIEW 1 / 1



CD MECHANISM PARTS LIST 1 / 1

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	9X-262-620-210		MOTOR CHASSIS ASSY
2	92-626-907-010		GEAR(A)
3	87-A90-468-010		PICK UP KSS-213C
4	92-626-908-010		SHAFT SLED
A	97-621-255-150		SCREW+P2-3

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
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